

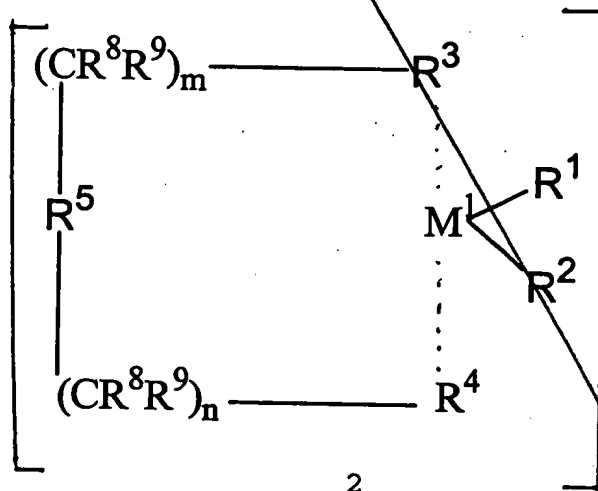
Sub E1
cont

range maximum is between 120 and 165°C, the half-intensity width of the melting peak is broader than 10°C and

the width determined at quarter peak height is greater than 15°C, wherein such process comprises the direct polymerization of propylene or copolymerization of propylene with olefins of the formula $R^aCH = CHR^b$, in which R^a and R^b are identical or different and are a hydrogen atom or an alkyl radical having 1 to 14 carbon atoms, or R^a and R^b , together with the atoms connecting them, can form a ring,

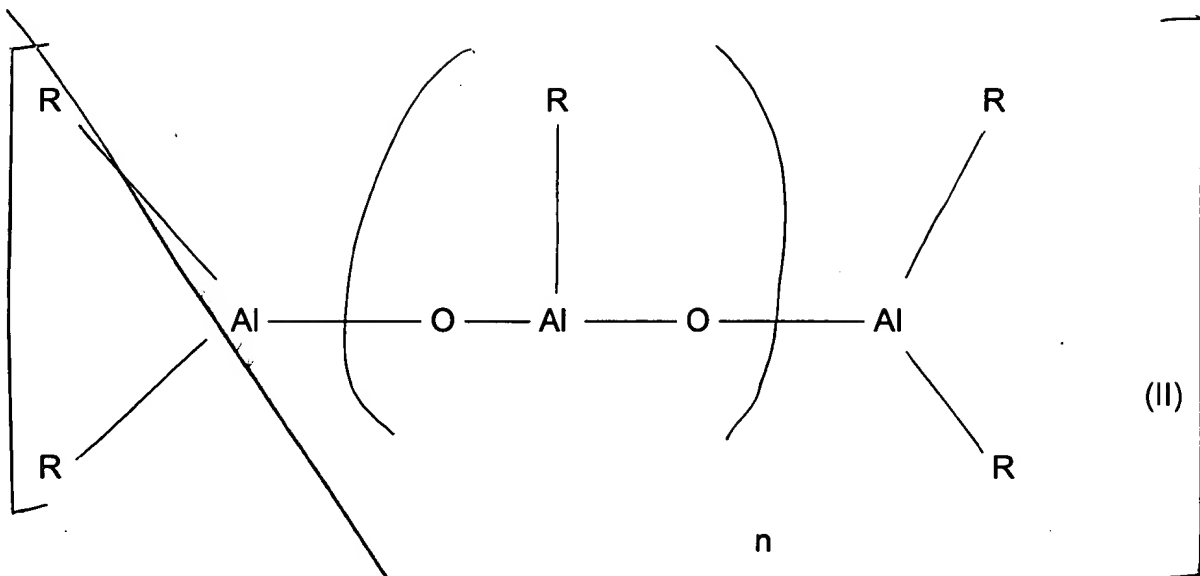
to at least two polyolefins of different melting points, wherein the melting points of the polyolefins must differ by at least 5° C, and wherein the polymerized is carried out at a temperature of from -60 to 200°C, and a pressure of from 0.5 to 100 bar, in solution, in suspension or in the gas phase, in the presence of a catalyst, wherein the catalyst comprises

(A) at least two metallocenes as transition-metal components and an aluminoxane of the formula II

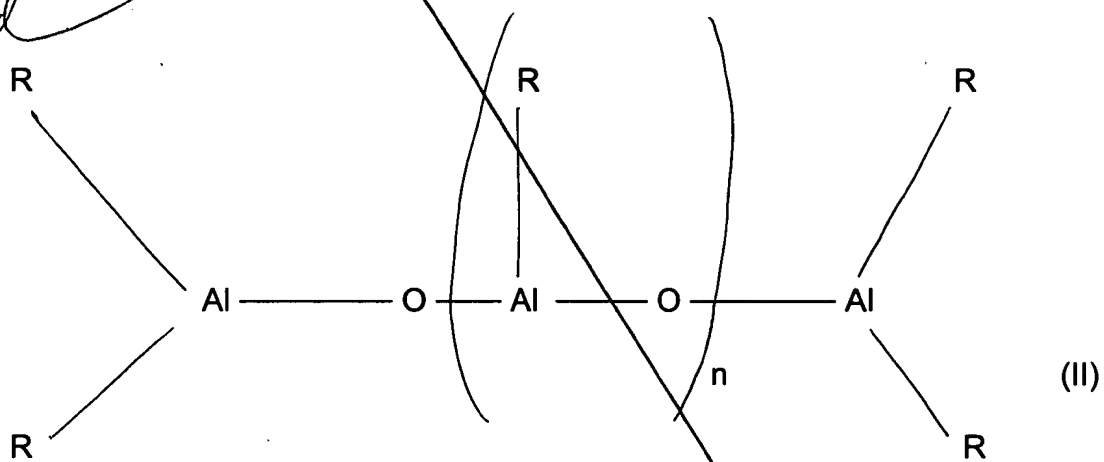


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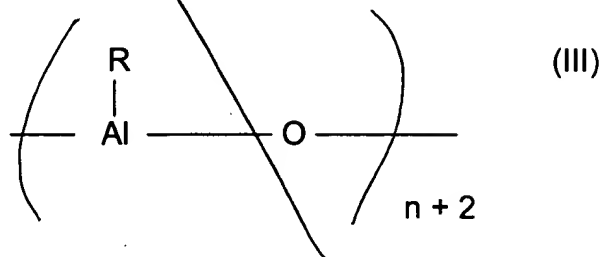
Substituent
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for the linear type and/or of the formula III



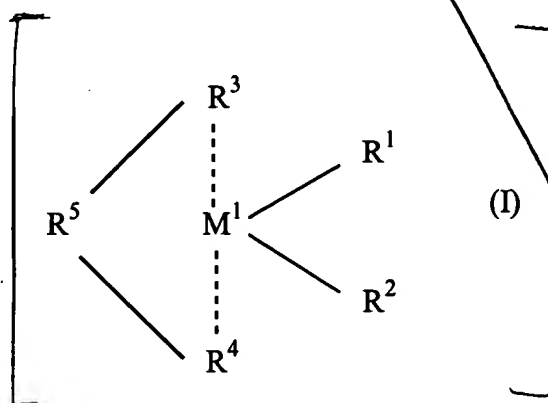
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for the cyclic type, where in the formulae II and III, the radicals R may be identical or different are a C₁-C₆-alkyl group, a C₁-C₆-fluoroalkyl group, a C₆-C₁₈-aryl group, a C₆-C₁₈-fluoroaryl group or hydrogen, and n is an integer from 0 to 50, and the aluminoxane component may additionally contain a compound of the formula AlR₃, or

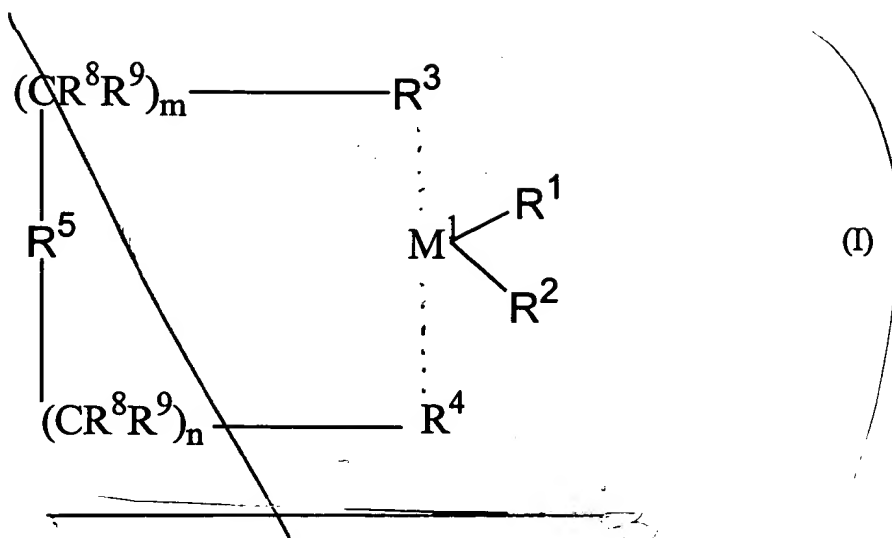
(B) at least two metallocenes as transition-metal components and a salt-like compound of the formula R_xNH_{4-x} or of the formula R₃PHBR'₄ wherein x is 1, 2 or 3, R is identical or different and is alkyl or aryl, and R' is aryl, which may also be fluorinated or partly fluorinated,

D1
cont

where the transition-metal component used comprises at least two metallocenes of the formula I:



Substituted
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in which

M^1 is Zr or Hf,

R^1 and R^2 are identical or different and are a hydrogen atom, a C_1 - C_{10} -alkyl group, a C_1 - C_{10} -alkoxy group, a C_6 - C_{10} -aryl group, a C_6 - C_{10} -aryloxy group, a C_2 - C_{10} -alkenyl group, a C_7 - C_{40} -arylalkyl group, a C_7 - C_{40} -alkylaryl group, a C_8 - C_{40} -arylalkenyl group, or a halogen atom,

R^3 and R^4 are identical or different and are a monocyclic or polycyclic, unsubstituted or substituted hydrocarbon radical, together with the metal atom M^1 , can form a sandwich structure,

SUBJECT
CONT~~R⁵ is~~~~R¹¹~~~~-M²-~~

or

~~R¹²~~~~R¹¹~~~~-C-~~~~R¹²~~

where R¹¹ and R¹² are identical or different and are a hydrogen atom, a halogen atom, a C₁-C₁₀-alkyl group, a C₁-C₁₀-fluoroalkyl group, a C₆-C₁₀-aryl group, a C₆-C₁₀-fluoraryl group, a C₁-C₁₀-alkoxy group, a C₂-C₁₀-alkenyl group, a C₇-C₄₀-arylalkyl group, a C₈-C₄₀-arylalkenyl group or a C₇-C₄₀-alkylaryl group, or R¹¹ and R¹² together with the atoms connecting them, form a ring,

M² is silicon or germanium,

R⁸ and R⁹ are identical or different and are as defined for R¹¹ and

m and n are identical or different and are zero or 1.